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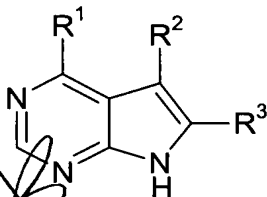
(C<sub>3</sub>-C<sub>9</sub>)Heteroaryl when used herein refers to furyl, thienyl, thiazolyl, pyrazolyl, isothiazolyl, oxazolyl, isoxazolyl, pyrrolyl, triazolyl, tetrazolyl, imidazolyl, 1,3,5-oxadiazolyl, 1,2,4-oxadiazolyl, 1,2,3-oxadiazolyl, 1,3,5-thiadiazolyl, 1,2,3-thiadiazolyl, 1,2,4-thiadiazolyl, pyridyl, pyrimidyl, pyrazinyl, pyridazinyl, 1,2,4-triazinyl, 1,2,3-triazinyl, 1,3,5-triazinyl, pyrazolo[3,4-b]pyridinyl, cinnolinyl, pteridinyl, purinyl, 6,7-dihydro-5H-[1]pyrindinyl, benzo[b]thiophenyl, 5, 6, 7, 8-tetrahydro-quinolin-3-yl, benzoxazolyl, benzothiazolyl, benzisothiazolyl, benzisoxazolyl, benzimidazolyl, thianaphthenyl, isothianaphthenyl, benzofuranyl, isobenzofuranyl, isoindolyl, indolyl, indoliziny, indazolyl, isoquinolyl, quinolyl, phthalazinyl, quinoxaliny, quinazoliny, benzoxazinyl, dihydrofuranyl, pyranyl, thiopyranyl, chromenyl, 1,2-tetrahydrothiazin-2-yl, 1,3-tetrahydrothiazin-3-yl, tetrahydrothiadiazinyl, 1,2-tetrahydrodiazin-2-yl, 1,3-tetrahydrodiazin-1-yl, tetrahydroazepinyl, chromanyl; etc. One of ordinary skill in the art will understand that the connection of said (C<sub>2</sub>-C<sub>9</sub>)heteroaryl rings is through a carbon atom or a sp<sup>3</sup> hybridized nitrogen heteroatom.--

**IN THE CLAIMS:**

Please amend the claims as follows:

Please cancel claims 21, 23 and 24 without waiver, prejudice or disclaimer.

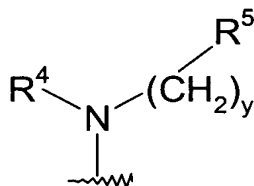
1. (Amended) A compound of the formula



or the pharmaceutically acceptable salt thereof; wherein

R<sup>1</sup> is a group of the formula

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wherein y is 0, 1 or 2;

$\text{R}^4$  is selected from the group consisting of hydrogen, (C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonyl, (C<sub>2</sub>-C<sub>6</sub>)alkenyl, and (C<sub>2</sub>-C<sub>6</sub>)alkynyl wherein the alkyl, alkenyl and alkynyl groups are optionally substituted by deuterium, hydroxy, amino, trifluoromethyl, (C<sub>1</sub>-C<sub>4</sub>)alkoxy, (C<sub>1</sub>-C<sub>6</sub>)acyloxy, (C<sub>1</sub>-C<sub>6</sub>)alkylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino, cyano, nitro, (C<sub>2</sub>-C<sub>6</sub>)alkenyl, (C<sub>2</sub>-C<sub>6</sub>)alkynyl or (C<sub>1</sub>-C<sub>6</sub>)acylamino; or  $\text{R}^4$  is (C<sub>3</sub>-C<sub>10</sub>)cycloalkyl wherein the cycloalkyl group is optionally substituted by deuterium, hydroxy, amino, trifluoromethyl, (C<sub>1</sub>-C<sub>6</sub>)acyloxy, (C<sub>1</sub>-C<sub>6</sub>)acylamino, (C<sub>1</sub>-C<sub>6</sub>)alkylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino, cyano, cyano(C<sub>1</sub>-C<sub>6</sub>)alkyl, trifluoromethyl(C<sub>1</sub>-C<sub>6</sub>)alkyl, nitro, nitro(C<sub>1</sub>-C<sub>6</sub>)alkyl or (C<sub>1</sub>-C<sub>6</sub>)acylamino;

$\text{R}^5$  is (C<sub>3</sub>-C<sub>9</sub>)heterocycloalkyl wherein the heterocycloalkyl groups must be substituted by one to five carboxy, cyano, amino, deuterium, hydroxy, (C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy, halo, (C<sub>1</sub>-C<sub>6</sub>)acyl, (C<sub>1</sub>-C<sub>6</sub>)alkylamino, amino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy-CO-NH, (C<sub>1</sub>-C<sub>6</sub>)alkylamino-CO-, (C<sub>2</sub>-C<sub>6</sub>)alkenyl, (C<sub>2</sub>-C<sub>6</sub>)alkynyl, hydroxy(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)acyloxy(C<sub>1</sub>-C<sub>6</sub>)alkyl, nitro, cyano(C<sub>1</sub>-C<sub>6</sub>)alkyl, halo(C<sub>1</sub>-C<sub>6</sub>)alkyl, nitro(C<sub>1</sub>-C<sub>6</sub>)alkyl, trifluoromethyl, trifluoromethyl(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)acylamino, (C<sub>1</sub>-C<sub>6</sub>)acylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy(C<sub>1</sub>-C<sub>6</sub>)acylamino, amino(C<sub>1</sub>-C<sub>6</sub>)acyl, amino(C<sub>1</sub>-C<sub>6</sub>)acyl(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)acyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino(C<sub>1</sub>-C<sub>6</sub>)acyl,  $\text{R}^{15}\text{R}^{16}\text{N-CO-O-}$ ,  $\text{R}^{15}\text{R}^{16}\text{N-CO-(C}_1\text{-C}_6\text{)alkyl}$ , (C<sub>1</sub>-C<sub>6</sub>)alkyl-S(O)<sub>m</sub>,  $\text{R}^{15}\text{R}^{16}\text{NS(O)}_m$ ,  $\text{R}^{15}\text{R}^{16}\text{NS(O)}_m\text{(C}_1\text{-C}_6\text{)alkyl}$ ,  $\text{R}^{15}\text{S(O)}_m\text{R}^{16}\text{N}$ ,  $\text{R}^{15}\text{S(O)}_m\text{R}^{16}\text{N(C}_1\text{-C}_6\text{)alkyl}$ , wherein m is 0, 1 or 2 and  $\text{R}^{15}$  and  $\text{R}^{16}$  are each independently selected from hydrogen or (C<sub>1</sub>-C<sub>6</sub>)alkyl, or a group of the formula



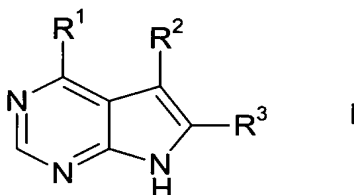
$R^{12}$  is carboxy, cyano, amino, oxo, deuterium, hydroxy, trifluoromethyl, (C<sub>1</sub>-C<sub>6</sub>)alkyl, trifluoromethyl(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy, halo, (C<sub>1</sub>-C<sub>6</sub>)acyl, (C<sub>1</sub>-C<sub>6</sub>)alkylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub> amino, amino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy-CO-NH, (C<sub>1</sub>-C<sub>6</sub>)alkylamino-CO-, (C<sub>2</sub>-C<sub>6</sub>)alkenyl, (C<sub>2</sub>-C<sub>6</sub>) alkynyl, (C<sub>1</sub>-C<sub>6</sub>)alkylamino, hydroxy(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)acyloxy(C<sub>1</sub>-C<sub>6</sub>)alkyl, nitro, cyano(C<sub>1</sub>-C<sub>6</sub>)alkyl, halo(C<sub>1</sub>-C<sub>6</sub>)alkyl, nitro(C<sub>1</sub>-C<sub>6</sub>)alkyl, trifluoromethyl, trifluoromethyl(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)acylamino, (C<sub>1</sub>-C<sub>6</sub>)acylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy(C<sub>1</sub>-C<sub>6</sub>)acylamino, amino(C<sub>1</sub>-C<sub>6</sub>)acyl, amino(C<sub>1</sub>-C<sub>6</sub>)acyl(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)acyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino(C<sub>1</sub>-C<sub>6</sub>)acyl,  $R^{15}R^{16}N-CO-O$ ,  $R^{15}R^{16}N-CO-(C_1-C_6)alkyl$ ,  $R^{15}C(O)NH$ ,  $R^{15}OC(O)NH$ ,  $R^{15}NHC(O)NH$ , (C<sub>1</sub>-C<sub>6</sub>)alkyl-S(O)<sub>m</sub>, (C<sub>1</sub>-C<sub>6</sub>)alkyl-S(O)<sub>m</sub>-(C<sub>1</sub>-C<sub>6</sub>)alkyl,  $R^{15}R^{16}NS(O)_m$ ,  $R^{15}R^{16}NS(O)_m (C_1-C_6)alkyl$ ,  $R^{15}S(O)_m R^{16}N$ , or

$R^{15}S(O)_mR^{16}N(C_1-C_6)alkyl$ , wherein  $m$  is 0, 1 or 2 and  $R^{15}$  and  $R^{16}$  are each independently selected from hydrogen or  $(C_1-C_6)alkyl$ ;

$R^2$  and  $R^3$  are each independently selected from the group consisting of hydrogen, deuterium, amino, halo, hydroxy, nitro, carboxy,  $(C_2-C_6)alkenyl$ ,  $(C_2-C_6)alkynyl$ , trifluoromethyl, trifluoromethoxy,  $(C_1-C_6)alkyl$ ,  $(C_1-C_6)alkoxy$ , and  $(C_3-C_{10})cycloalkyl$ , wherein the alkyl, alkoxy or cycloalkyl groups are optionally substituted by one to three groups selected from halo, hydroxy, carboxy, amino  $(C_1-C_6)alkylthio$ ,  $(C_1-C_6)alkylamino$ ,  $((C_1-C_6)alkyl)_2amino$ ,  $(C_3-C_9)heteroaryl$ ,  $(C_2-C_9)heterocycloalkyl$ ,  $(C_3-C_9)cycloalkyl$  or  $(C_6-C_{10})aryl$ ; or  $R^2$  and  $R^3$  are each independently  $(C_3-C_{10})cycloalkyl$ ,  $(C_3-C_{10})cycloalkoxy$ ,  $(C_1-C_6)alkylamino$ ,  $((C_1-C_6)alkyl)_2amino$ ,  $(C_6-C_{10})arylamino$ ,  $(C_1-C_6)alkylthio$ ,  $(C_6-C_{10})arylthio$ ,  $(C_1-C_6)alkylsulfinyl$ ,  $(C_6-C_{10})arylsulfinyl$ ,  $(C_1-C_6)alkylsulfonyl$ ,  $(C_6-C_{10})arylsulfonyl$ ,  $(C_1-C_6)acyl$ ,  $(C_1-C_6)alkoxy-CO-NH-$ ,  $(C_1-C_6)alkylamino-CO-$ ,  $(C_5-C_9)heteroaryl$ ,  $(C_2-C_9)heterocycloalkyl$  or  $(C_6-C_{10})aryl$  wherein the heteroaryl, heterocycloalkyl and aryl groups are optionally substituted by one to three halo,  $(C_1-C_6)alkyl$ ,  $(C_1-C_6)alkyl-CO-NH-$ ,  $(C_1-C_6)alkoxy-CO-NH-$ ,  $(C_1-C_6)alkyl-CO-NH-(C_1-C_6)alkyl$ ,  $(C_1-C_6)alkoxy-CO-NH-(C_1-C_6)alkyl$ ,  $(C_1-C_6)alkoxy-CO-NH-(C_1-C_6)alkoxy$ , carboxy, carboxy $(C_1-C_6)alkyl$ , carboxy $(C_1-C_6)alkoxy$ , benzyloxycarbonyl $(C_1-C_6)alkoxy$ ,  $(C_1-C_6)alkoxycarbonyl(C_1-C_6)alkoxy$ ,  $(C_6-C_{10})aryl$ , amino, amino $(C_1-C_6)alkyl$ ,  $(C_1-C_6)alkoxycarbonylamino$ ,  $(C_6-C_{10})aryl(C_1-C_6)alkoxycarbonylamino$ ,  $(C_1-C_6)alkylamino$ ,  $((C_1-C_6)alkyl)_2amino$ ,  $(C_1-C_6)alkylamino(C_1-C_6)alkyl$ ,  $((C_1-C_6)alkyl)_2amino(C_1-C_6)alkyl$ , hydroxy,  $(C_1-C_6)alkoxy$ , carboxy, carboxy $(C_1-C_6)alkyl$ ,  $(C_1-C_6)alkoxycarbonyl$ ,  $(C_1-C_6)alkoxycarbonyl(C_1-C_6)alkyl$ ,  $(C_1-C_6)alkoxy-CO-NH-$ ,  $(C_1-C_6)alkyl-CO-NH-$ , cyano,  $(C_5-C_9)heterocycloalkyl$ , amino- $CO-NH-$ ,  $(C_1-C_6)alkylamino-CO-NH-$ ,  $((C_1-C_6)alkyl)_2amino-CO-NH-$ ,  $(C_6-C_{10})arylamino-CO-NH-$ ,  $(C_5-C_9)heteroarylamino-CO-NH-$ ,  $(C_1-C_6)alkylamino-CO-NH-(C_1-C_6)alkyl$ ,  $((C_1-C_6)alkyl)_2amino-CO-NH-(C_1-C_6)alkyl$ ,  $(C_6-C_{10})arylamino-CO-NH-(C_1-C_6)alkyl$ ,  $(C_5-C_9)heteroarylamino-CO-NH-(C_1-C_6)alkyl$ ,  $(C_1-C_6)alkylsulfonyl$ ,  $(C_1-C_6)alkylsulfonylamino$ ,  $(C_1-C_6)alkylsulfonylamino(C_1-C_6)alkyl$ ,  $(C_6-C_{10})arylsulfonyl$ ,  $(C_6-C_{10})arylsulfonylamino$ ,  $(C_6-C_{10})arylsulfonylamino(C_1-C_6)alkyl$ ,  $(C_1-$

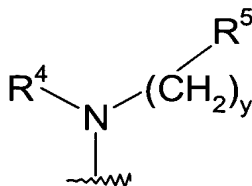
AS  
C<sub>6</sub>alkylsulfonylamino, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>5</sub>-C<sub>9</sub>)heteroaryl or (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyl.

19. (Amended) A compound of the formula



or the pharmaceutically acceptable salt thereof; wherein

R<sup>1</sup> is a group of the formula



wherein y is 0, 1 or 2;

le  
R<sup>4</sup> is selected from the group consisting of hydrogen, (C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonyl, (C<sub>2</sub>-C<sub>6</sub>)alkenyl, and (C<sub>2</sub>-C<sub>6</sub>)alkynyl wherein the alkyl, alkenyl and alkynyl groups are optionally substituted by deuterium, hydroxy, amino, trifluoromethyl, (C<sub>1</sub>-C<sub>4</sub>)alkoxy, (C<sub>1</sub>-C<sub>6</sub>)acyloxy, (C<sub>1</sub>-C<sub>6</sub>)alkylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino, cyano, nitro, (C<sub>2</sub>-C<sub>6</sub>)alkenyl, (C<sub>2</sub>-C<sub>6</sub>)alkynyl or (C<sub>1</sub>-C<sub>6</sub>)acylamino; or R<sup>4</sup> is (C<sub>3</sub>-C<sub>10</sub>)cycloalkyl wherein the cycloalkyl group is optionally substituted by deuterium, hydroxy, amino, trifluoromethyl, (C<sub>1</sub>-C<sub>6</sub>)acyloxy, (C<sub>1</sub>-C<sub>6</sub>)acylamino, (C<sub>1</sub>-C<sub>6</sub>)alkylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino, cyano, cyano(C<sub>1</sub>-C<sub>6</sub>)alkyl, trifluoromethyl(C<sub>1</sub>-C<sub>6</sub>)alkyl, nitro, nitro(C<sub>1</sub>-C<sub>6</sub>)alkyl or (C<sub>1</sub>-C<sub>6</sub>)acylamino;

R<sup>5</sup> is (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyl wherein the heterocycloalkyl groups must be substituted by one to five carboxy, cyano, amino, deuterium, hydroxy, (C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy, halo, (C<sub>1</sub>-C<sub>6</sub>)acyl, (C<sub>1</sub>-C<sub>6</sub>)alkylamino, amino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy-CO-NH, (C<sub>1</sub>-C<sub>6</sub>)alkylamino-CO-, (C<sub>2</sub>-C<sub>6</sub>)alkenyl, (C<sub>2</sub>-C<sub>6</sub>)alkynyl, hydroxy(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-

X

$$\text{---} \text{N} \text{---} (\text{CR}^6\text{R}^7)_a (\text{X})_b \left( \text{N} \begin{array}{c} \text{---} (\text{CR}^9\text{R}^{10})_d (\text{Y})_e \text{---} \text{N} \begin{array}{c} \text{---} (\text{R}^{11})_f \text{---} (\text{Z})_g \text{---} \text{R}^{12} \end{array} \end{array} \right)_c \text{---}$$

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b, c, e, f and g are each independently 0 or 1;

$d$  is 0, 1, 2, or 3;

X is S(O)<sub>n</sub> wherein n is 0, 1 or 2; oxygen, carbonyl or -C(=N-cyano)-;

Y is S(O)<sub>n</sub> wherein n is 0, 1 or 2; or carbonyl; and

Z is carbonyl, C(O)O-, or S(O)<sub>n</sub> wherein n is 0, 1 or 2;

$R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{10}$  and  $R^{11}$  are each independently selected from the group consisting of hydrogen and (C<sub>1</sub>-C<sub>6</sub>)alkyl optionally substituted by deuterium, hydroxy, amino, trifluoromethyl, (C<sub>1</sub>-C<sub>6</sub>)acyloxy, (C<sub>1</sub>-C<sub>6</sub>)acylamino, (C<sub>1</sub>-C<sub>6</sub>)alkylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino, cyano, cyano(C<sub>1</sub>-C<sub>6</sub>)alkyl, trifluoromethyl(C<sub>1</sub>-C<sub>6</sub>)alkyl, nitro, nitro(C<sub>1</sub>-C<sub>6</sub>)alkyl or (C<sub>1</sub>-C<sub>6</sub>)acylamino;

~~R<sup>12</sup> is carboxy, cyano, amino, oxo, deuterium, hydroxy, trifluoromethyl, (C<sub>1</sub>-C<sub>6</sub>)alkyl, trifluoromethyl(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy, halo, (C<sub>1</sub>-C<sub>6</sub>)acyl, (C<sub>1</sub>-C<sub>6</sub>)alkylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub> amino, amino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy-CO-NH, (C<sub>1</sub>-~~

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C<sub>6</sub>)alkylamino-CO-, (C<sub>2</sub>-C<sub>6</sub>)alkenyl, (C<sub>2</sub>-C<sub>6</sub>) alkynyl, (C<sub>1</sub>-C<sub>6</sub>)alkylamino, hydroxy(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)acyloxy(C<sub>1</sub>-C<sub>6</sub>)alkyl, nitro, cyano(C<sub>1</sub>-C<sub>6</sub>)alkyl, halo(C<sub>1</sub>-C<sub>6</sub>)alkyl, nitro(C<sub>1</sub>-C<sub>6</sub>)alkyl, trifluoromethyl, trifluoromethyl(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)acylamino, (C<sub>1</sub>-C<sub>6</sub>)acylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy(C<sub>1</sub>-C<sub>6</sub>)acylamino, amino(C<sub>1</sub>-C<sub>6</sub>)acyl, amino(C<sub>1</sub>-C<sub>6</sub>)acyl(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)acyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino(C<sub>1</sub>-C<sub>6</sub>)acyl, R<sup>15</sup>R<sup>16</sup>N-CO-O-, R<sup>15</sup>R<sup>16</sup>N-CO-(C<sub>1</sub>-C<sub>6</sub>)alkyl, R<sup>15</sup>C(O)NH, R<sup>15</sup>OC(O)NH, R<sup>15</sup>NHC(O)NH, (C<sub>1</sub>-C<sub>6</sub>)alkyl-S(O)<sub>m</sub>, (C<sub>1</sub>-C<sub>6</sub>)alkyl-S(O)<sub>m</sub>-(C<sub>1</sub>-C<sub>6</sub>)alkyl, R<sup>15</sup>R<sup>16</sup>NS(O)<sub>m</sub>, R<sup>15</sup>R<sup>16</sup>NS(O)<sub>m</sub>(C<sub>1</sub>-C<sub>6</sub>)alkyl, R<sup>15</sup>S(O)<sub>m</sub>R<sup>16</sup>N, or R<sup>15</sup>S(O)<sub>m</sub>R<sup>16</sup>N(C<sub>1</sub>-C<sub>6</sub>)alkyl, wherein m is 0, 1 or 2 and R<sup>15</sup> and R<sup>16</sup> are each independently selected from hydrogen or (C<sub>1</sub>-C<sub>6</sub>)alkyl;

R<sup>12</sup> is cyano, trifluoromethyl, (C<sub>1</sub>-C<sub>6</sub>)alkyl, trifluoromethyl(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino, (C<sub>2</sub>-C<sub>6</sub>)alkynyl, cyano(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkyl-S(O)<sub>m</sub> wherein m is 0, 1 or 2;

R<sup>2</sup> and R<sup>3</sup> are each independently selected from the group consisting of hydrogen, deuterium, amino, halo, hydroxy, nitro, carboxy, (C<sub>2</sub>-C<sub>6</sub>)alkenyl, (C<sub>2</sub>-C<sub>6</sub>)alkynyl, trifluoromethyl, trifluoromethoxy, (C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy, and (C<sub>3</sub>-C<sub>10</sub>)cycloalkyl, wherein the alkyl, alkoxy or cycloalkyl groups are optionally substituted by one to three groups selected from halo, hydroxy, carboxy, amino (C<sub>1</sub>-C<sub>6</sub>)alkylthio, (C<sub>1</sub>-C<sub>6</sub>)alkylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino, (C<sub>5</sub>-C<sub>9</sub>)heteroaryl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyl, (C<sub>3</sub>-C<sub>9</sub>)cycloalkyl or (C<sub>6</sub>-C<sub>10</sub>)aryl; or R<sup>2</sup> and R<sup>3</sup> are each independently (C<sub>3</sub>-C<sub>10</sub>)cycloalkyl, (C<sub>3</sub>-C<sub>10</sub>)cycloalkoxy, (C<sub>1</sub>-C<sub>6</sub>)alkylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino, (C<sub>6</sub>-C<sub>10</sub>)arylamino, (C<sub>1</sub>-C<sub>6</sub>)alkylthio, (C<sub>6</sub>-C<sub>10</sub>)arylthio, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfinyl, (C<sub>6</sub>-C<sub>10</sub>)arylsulfinyl, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonyl, (C<sub>6</sub>-C<sub>10</sub>)arylsulfonyl, (C<sub>1</sub>-C<sub>6</sub>)acyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy-CO-NH-, (C<sub>1</sub>-C<sub>6</sub>)alkylamino-CO-, (C<sub>5</sub>-C<sub>9</sub>)heteroaryl, (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyl or (C<sub>6</sub>-C<sub>10</sub>)aryl wherein the heteroaryl, heterocycloalkyl and aryl groups are optionally substituted by one to three halo, (C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkyl-CO-NH-, (C<sub>1</sub>-C<sub>6</sub>)alkoxy-CO-NH-, (C<sub>1</sub>-C<sub>6</sub>)alkyl-CO-NH-(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy-CO-NH-(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy-CO-NH-(C<sub>1</sub>-C<sub>6</sub>)alkoxy, carboxy, carboxy(C<sub>1</sub>-C<sub>6</sub>)alkyl, carboxy(C<sub>1</sub>-C<sub>6</sub>)alkoxy, benzyloxycarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkoxy, (C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkoxy, (C<sub>6</sub>-C<sub>10</sub>)aryl, amino, amino(C<sub>1</sub>-

*X*

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C<sub>6</sub>alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonylamino, (C<sub>6</sub>-C<sub>10</sub>)aryl(C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonylamino, (C<sub>1</sub>-C<sub>6</sub>)alkylamino, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino, (C<sub>1</sub>-C<sub>6</sub>)alkylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino(C<sub>1</sub>-C<sub>6</sub>)alkyl, hydroxy, (C<sub>1</sub>-C<sub>6</sub>)alkoxy, carboxy, carboxy(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxycarbonyl(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy-CO-NH-, (C<sub>1</sub>-C<sub>6</sub>)alkyl-CO-NH-, cyano, (C<sub>5</sub>-C<sub>9</sub>)heterocycloalkyl, amino-CO-NH-, (C<sub>1</sub>-C<sub>6</sub>)alkylamino-CO-NH-, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino-CO-NH-, (C<sub>6</sub>-C<sub>10</sub>)arylamino-CO-NH-, (C<sub>5</sub>-C<sub>9</sub>)heteroarylamino-CO-NH-, (C<sub>1</sub>-C<sub>6</sub>)alkylamino-CO-NH-(C<sub>1</sub>-C<sub>6</sub>)alkyl, ((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>amino-CO-NH-(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>6</sub>-C<sub>10</sub>)arylamino-CO-NH-(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>5</sub>-C<sub>9</sub>)heteroarylamino-CO-NH-(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonyl, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>6</sub>-C<sub>10</sub>)arylsulfonyl, (C<sub>6</sub>-C<sub>10</sub>)arylsulfonylamino, (C<sub>6</sub>-C<sub>10</sub>)arylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino, (C<sub>1</sub>-C<sub>6</sub>)alkylsulfonylamino(C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>5</sub>-C<sub>9</sub>)heteroaryl or (C<sub>2</sub>-C<sub>9</sub>)heterocycloalkyl.

20. (Amended) A compound according to claim 1, wherein said compound is selected from the group consisting of:

Sub 01  
Methyl-[4-methyl-1-(propane-1-sulfonyl)-piperidin-3-yl]-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-amine;

4-Methyl-3-[methyl-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-amino]-piperidine-1-carboxylic acid methyl ester;

3,3,3-Trifluoro-1-{4-methyl-3-[methyl-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-amino]-piperidin-1-yl}-propan-1-one;

4-Methyl-3-[methyl-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-amino]-piperidine-1-carboxylic acid dimethylamide;

3-{4-Methyl-3-[methyl-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-amino]-piperidin-1-yl}-3-oxo-propionitrile;

3,3,3-Trifluoro-1-{4-methyl-3-[methyl-(5-methyl-7H-pyrrolo[2,3-d]pyrimidin-4-yl)-amino]-piperidin-1-yl}-propan-1-one;

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A<sup>6</sup>  
1-{4-Methyl-3-[methyl-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-amino]-piperidin-1-yl}-  
but-3-yn-1-one;

1-{3-[(5-Chloro-7H-pyrrolo[2,3-d]pyrimidin-4-yl)-methyl-amino]-4-methyl-  
piperidin-1-yl}-propan-1-one; and

1-{3-[(5-Fluoro-7H-pyrrolo[2,3-d]pyrimidin-4-yl)-methyl-amino]-4-methyl-  
piperidin-1-yl}-propan-1-one.

A<sup>7</sup>  
22. (Amended) A pharmaceutical composition for (a) treating or preventing a disorder or condition selected from organ transplant rejection, xeno transplation, lupus, multiple sclerosis, rheumatoid arthritis, psoriasis, Type I diabetes and complications from diabetes, cancer, asthma, atopic dermatitis, autoimmune thyroid disorders, ulcerative colitis, Crohn's disease, Alzheimer's disease, and autoimmune diseases or (b) the inhibition of protein kinases or Janus Kinase 3 (JAK3) in a mammal, including a human, comprising an amount of a compound of claim 1 or a pharmaceutically acceptable salt thereof, alone or in combination with one or more additional agents which modulate a mammalian immune system or with antiinflammatory agents, effective in such disorders or conditions and a pharmaceutically acceptable carrier.

A<sup>8</sup>  
26. (Amended) A method for treating or preventing a disorder or condition selected from organ transplant rejection, xeno transplation, lupus, multiple sclerosis, rheumatoid arthritis, psoriasis, Type I diabetes and complications from diabetes, cancer, asthma, atopic dermatitis, autoimmune thyroid disorders, ulcerative colitis, Crohn's disease, Alzheimer's disease, and autoimmune diseases in a mammal, including a human, comprising administering to said mammal an amount of a compound of claim 1 or a pharmaceutically acceptable salt thereof, alone or in combination with one or more additional agents which modulate a mammalian immune system or with antiinflammatory agents, effective in treating such a condition.

Please add the following new claims 27-29:

X

--27. (New) A pharmaceutical composition of claim 22, wherein the disorder or condition is the cancer leukemia.

28. (New) A pharmaceutical composition of claim 22, wherein said additional agent is cyclosporin A, rapamycin, tacrolimus, leflunomide, deoxyspergualin, mycophenolate, azathioprine, daclizumab, OKT3, AtGam, aspirin, acetaminophen, ibuprofen, naproxen, piroxicam or an anti-inflammatory steroid.

29. (New) A method of claim 26, wherein the disorder or condition is the cancer leukemia.

30. (New) A method of claim 26, wherein said additional agent is cyclosporin A, rapamycin, tacrolimus, leflunomide, deoxyspergualin, mycophenolate, azathioprine, daclizumab, OKT3, AtGam, aspirin, acetaminophen, ibuprofen, naproxen, piroxicam or an anti-inflammatory steroid.

31. (New) A compound of 3-{4-Methyl-3-[methyl-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-amino]-piperidin-1-yl}-3-oxo-propionitrile, or pharmaceutically acceptable salt thereof.--